

## SEQUENCE LISTING

<110> ZOLLO, MASSIMO

<120> USE OF ENZYMATIC INHIBITORS OF H-PRUNE FOR THE PREVENTION AND  
TREATMENT OF THE METASTASES OF TUMOURS OVEREXPRESSING H-PRUNE

<130> 026073-00006

<140> 10/582,115

<141> 2006-06-08

<150> PCT/IT2004/000689

<151> 2004-12-10

<150> IT RM2003A000572

<151> 2003-12-11

<160> 118

<170> PatentIn version 3.5

<210> 1

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
primer

<400> 1

agagatcttg gacaggcaaa ct

22

<210> 2

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
primer

<400> 2

taggacctga cacagttgta cc

22

<210> 3

<211> 15

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
probe

<400> 3  
ctgcatggaa ccac

15

<210> 4  
<211> 18  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
antigen for the monoclonal antibody anti h-PRUNE  
sequence

<400> 4  
Ala Leu Glu Glu Ala Val Ala Glu Val Leu Asp His Arg Pro Ile Glu  
1 5 10 15

Pro Lys

<210> 5  
<211> 42  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
primer

<400> 5  
gtacgagagg tgctagccgc tgcagccac gagccgaaac ac

42

<210> 6  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
primer

<400> 6  
gaagcctgtg ctttgactc c

21

<210> 7  
<211> 33  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
primer

<400> 7  
accctcatcc ttgtcgctca tcatatctta tcc 33

<210> 8  
<211> 30  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
primer

<400> 8  
gaaccatcat cctggcatgt gtcaacatgg 30

<210> 9  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
inhibitor of h-prune H1 sequence

<400> 9  
Asn Ile Ile His Gly Ser Asp Ser Val Glu Ser Ala Glu Lys Glu  
1 5 10 15

<210> 10  
<211> 29  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
permeable inhibitor of h-prune H1 sequence

<400> 10  
Asn Ile Ile His Gly Ser Asp Ser Val Glu Ser Ala Glu Lys Glu Gly  
1 5 10 15

Gly Gly Tyr Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg  
20 25

<210> 11  
<211> 167  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
h-prune sequence

&lt;400&gt; 11

Met Tyr Asp Val Pro Asp Tyr Ala Ser Leu Gly Ser Pro Val Glu Met  
 1 5 10 15

Ala Asn Leu Glu Arg Thr Phe Ile Ala Ile Lys Pro Asp Gly Val Gln  
 20 25 30

Arg Gly Leu Val Gly Glu Ile Ile Lys Arg Phe Glu Gln Lys Gly Phe  
 35 40 45

Arg Leu Val Ala Met Lys Phe Leu Arg Ala Ser Glu Glu His Leu Lys  
 50 55 60

Gln His Tyr Ile Asp Leu Lys Asp Arg Pro Phe Phe Pro Gly Leu Val  
 65 70 75 80

Lys Tyr Met Asn Ser Gly Pro Val Val Ala Met Val Trp Glu Gly Leu  
 85 90 95

Asn Val Val Lys Thr Gly Arg Val Met Leu Gly Glu Thr Asn Pro Ala  
 100 105 110

Asp Ser Lys Pro Gly Thr Ile Arg Gly Asp Phe Cys Ile Gln Val Gly  
 115 120 125

Arg Asn Ile Ile His Gly Ser Asp Ser Val Lys Ser Ala Glu Lys Glu  
 130 135 140

Ile Ser Leu Trp Phe Lys Pro Glu Glu Leu Val Asp Tyr Lys Ser Cys  
 145 150 155 160

Ala His Asp Trp Val Tyr Glu  
 165

&lt;210&gt; 12

&lt;211&gt; 15

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Synthetic  
 control peptide H1 (-) Casein kinase I sequence

&lt;400&gt; 12

Ser Asp Glu Ile Gly Lys Val Ser Glu Asn Ile Ala His Ser Glu  
 1 5 10 15

<210> 13  
 <211> 14  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 peptide

<400> 13  
 Gly Gly Gly Tyr Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg  
 1 5 10

<210> 14  
 <211> 13  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 peptide

<400> 14  
 Asn Ile Ile His Gly Ser Asp Ser Val Lys Ser Ala Glu  
 1 5 10

<210> 15  
 <211> 28  
 <212> PRT  
 <213> Mycobacterium tuberculosis

<400> 15  
 Val Gly Val Val Cys His Val His Pro Asp Ala Asp Thr Ile Gly Ala  
 1 5 10 15

Gly Leu Ala Leu Ala Leu Val Leu Asp Gly Cys Gly  
 20 25

<210> 16  
 <211> 19  
 <212> PRT  
 <213> Mycobacterium tuberculosis

<400> 16  
 Val Asp Leu Val Val Thr Val Asp Ile Pro Ser Val Asp Arg Leu Gly  
 1 5 10 15

Ala Leu Gly

<210> 17  
 <211> 13  
 <212> PRT  
 <213> Mycobacterium tuberculosis

<400> 17  
 Arg Glu Leu Leu Val Ile Asp His His Ala Ser Asn Asp  
 1 5 10

<210> 18  
 <211> 44  
 <212> PRT  
 <213> Mycobacterium tuberculosis

<400> 18  
 Ser Ala Asp Ser Thr Thr Thr Met Val Ala Glu Ile Leu Asp Ala Trp  
 1 5 10 15

Gly Lys Pro Ile Asp Pro Arg Val Ala His Cys Ile Tyr Ala Gly Leu  
 20 25 30

Ala Thr Asp Thr Gly Ser Phe Arg Trp Ala Ser Val  
 35 40

<210> 19  
 <211> 27  
 <212> PRT  
 <213> Mycobacterium tuberculosis

<400> 19  
 Thr Val Asn Leu Ala Ala Val Ala Ser Gly Phe Gly Gly Gly Gly His  
 1 5 10 15

Arg Leu Ala Ala Gly Tyr Thr Thr Thr Gly Ser  
 20 25

<210> 20  
 <211> 28  
 <212> PRT  
 <213> Synechocystis sp.

<400> 20  
 Asp Leu Ile Leu Cys His Gln Thr Ala Asp Phe Asp Val Leu Gly Ala  
 1 5 10 15

Ala Val Gly Leu Ala Lys Leu His Pro Gly Ser Arg  
 20 25

<210> 21  
 <211> 19  
 <212> PRT  
 <213> Synechocystis sp.

<400> 21  
 Ile Arg Ser Leu Tyr Ile Val Asp Asn Gln Gln Gly Asp Arg Leu Gly  
 1 5 10 15

Lys Ala Ala

<210> 22  
 <211> 13  
 <212> PRT  
 <213> Synechocystis sp.

<400> 22  
 Arg Gln Val Ala Ile Tyr Asp His His Leu Asn Ser Pro  
 1 5 10

<210> 23  
 <211> 44  
 <212> PRT  
 <213> Synechocystis sp.

<400> 23  
 Ala Val Gly Ala Ser Thr Thr Leu Ile Val Glu Lys Leu Gln Arg Ala  
 1 5 10 15

Asp Ile Ser Leu Ser Met Val Glu Ala Ser Val Met Ala Leu Gly Ile  
 20 25 30

His Val Asp Thr Gly Ser Leu Thr Phe Thr Gln Thr  
 35 40

<210> 24  
 <211> 27  
 <212> PRT  
 <213> Synechocystis sp.

<400> 24  
 Asp Thr Asp Leu Thr Gln Leu Leu Glu Pro Tyr Gly Gly Gly Gly His  
 1 5 10 15

Ala Gln Ala Ala Ala Val Asn Leu Arg Asp Val  
 20 25

<210> 25  
 <211> 28  
 <212> PRT  
 <213> Mycoplasma genitalium

<400> 25  
 Ile Val Ile Phe His His Val Arg Pro Asp Gly Asp Cys Leu Gly Ala  
 1 5 10 15

Gln Gln Gly Leu Phe His Leu Ile Lys Ala Asn Phe  
 20 25

<210> 26  
 <211> 19  
 <212> PRT  
 <213> Mycoplasma genitalium

<400> 26  
 Glu Ala Leu Ala Ile Val Val Asp Ala Asn Tyr Lys Asn Arg Ile Glu  
 1 5 10 15

Leu Arg Glu

<210> 27  
 <211> 13  
 <212> PRT  
 <213> Mycoplasma genitalium

<400> 27  
 Lys Ala Val Leu Arg Ile Asp His His Pro Asn Glu Asp  
 1 5 10

<210> 28  
 <211> 44  
 <212> PRT  
 <213> Mycoplasma genitalium

<400> 28  
 Ser Tyr Val Ala Cys Cys Glu Gln Ile Val Glu Met Ala Thr Val Ala  
 1 5 10 15

Lys Trp Thr Ile Pro Pro Val Ala Ala Thr Leu Leu Tyr Ile Gly Ile  
 20 25 30

Tyr Thr Asp Ser Asn Arg Phe Leu Tyr Ser Asn Thr  
 35 40



<210> 29  
 <211> 27  
 <212> PRT  
 <213> Mycoplasma genitalium

<400> 29  
 Gly Ile Asn Val Arg Asp Ile Ala Ile Lys Tyr Gly Gly Gly Gly His  
 1 5 10 15

Asn Asn Ala Ser Gly Ala Ile Ile Thr Asn Lys  
 20 25

<210> 30  
 <211> 28  
 <212> PRT  
 <213> Bacillus subtilis

<400> 30  
 Ile Ile Leu His Arg His Val Arg Pro Asp Pro Asp Ala Tyr Gly Ser  
 1 5 10 15

Gln Cys Gly Leu Thr Glu Ile Leu Arg Glu Thr Tyr  
 20 25

<210> 31  
 <211> 19  
 <212> PRT  
 <213> Bacillus subtilis

<400> 31  
 Gly Ala Leu Val Ile Val Cys Asp Thr Ala Asn Gln Glu Arg Ile Asp  
 1 5 10 15

Asp Gln Arg

<210> 32  
 <211> 13  
 <212> PRT  
 <213> Bacillus subtilis

<400> 32  
 Ala Lys Leu Met Lys Ile Asp His His Pro Asn Glu Asp  
 1 5 10

<210> 33  
 <211> 44  
 <212> PRT  
 <213> Bacillus subtilis

10

<400> 33

Ser Val Ser Glu Met Ile Tyr Glu Leu Tyr Leu Glu Gly Lys Glu His  
1 5 10 15

Gly Trp Lys Leu Asn Thr Lys Ala Ala Glu Leu Ile Tyr Ala Gly Ile  
20 25 30

Val Gly Asp Thr Gly Arg Phe Leu Phe Pro Asn Thr  
35 40

<210> 34

<211> 27

<212> PRT

<213> *Bacillus subtilis*

<400> 34

Gly Pro Val Ile Asn Gly Leu Ala Arg Lys Tyr Asn Gly Gly Gly His  
1 5 10 15

Pro Leu Ala Ser Gly Ala Ser Ile Tyr Ser Trp  
20 25

<210> 35

<211> 28

<212> PRT

<213> *Archaeoglobus fulgidus*

<400> 35

Leu Gly Ile Phe Thr His Asp Asn Pro Asp Pro Asp Ser Met Ser Ser  
1 5 10 15

Ala Tyr Ala Leu Arg Glu Ile Ala Lys Gln Phe Asp  
20 25

<210> 36

<211> 19

<212> PRT

<213> *Archaeoglobus fulgidus*

<400> 36

Tyr Asp Ala Phe Ala Ile Val Asp Ser Ser Gly Pro Gly Val Asn Asn  
1 5 10 15

Ser Ile Pro

<210> 37  
 <211> 13  
 <212> PRT  
 <213> Archaeoglobus fulgidus

<400> 37  
 Asp Ile Ser Ile Val Ile Asp His His Pro Ala Glu Lys  
 1 5 10

<210> 38  
 <211> 44  
 <212> PRT  
 <213> Archaeoglobus fulgidus

<400> 38  
 Asp Val Gly Ala Thr Ala Thr Ile Leu Thr Glu Tyr Ile Lys Glu Leu  
 1 5 10 15

Lys Ile Thr Pro Ser Lys Ile Leu Ala Thr Ala Leu Phe Phe Gly Ile  
 20 25 30

Lys Ser Glu Thr Asp Glu Phe Lys Arg Asn Thr Arg  
 35 40

<210> 39  
 <211> 27  
 <212> PRT  
 <213> Archaeoglobus fulgidus

<400> 39  
 Glu Val Leu Arg Arg Ala Phe Gly Asp Val Gly Ser Ala Gly Gly His  
 1 5 10 15

Ala His Ala Ala Gly Ala Gln Ile Pro Leu Gly  
 20 25

<210> 40  
 <211> 28  
 <212> PRT  
 <213> Methanocaldococcus jannaschii

<400> 40  
 Asn Lys Ile Leu Ile Val Thr His Ile Asp Thr Asp Gly Leu Thr Ser  
 1 5 10 15

Arg Ala Ile Leu Gln Lys Leu Ala Glu Arg Leu Asn  
 20 25

<210> 41  
 <211> 19  
 <212> PRT  
 <213> Methanocaldococcus jannaschii

<400> 41  
 Tyr Asp Leu Ile Ile Phe Ala Asp Leu Gly Ser Gly Gln Leu Lys Met  
 1 5 10 15

Ile Lys Glu

<210> 42  
 <211> 13  
 <212> PRT  
 <213> Methanocaldococcus jannaschii

<400> 42  
 Asp Lys Ile Ile Ile Leu Asp His His Gln Pro Glu Glu  
 1 5 10

<210> 43  
 <211> 44  
 <212> PRT  
 <213> Methanocaldococcus jannaschii

<400> 43  
 Gly Ala Glu Ile Cys Gly Ala Gly Val Ser Tyr Leu Phe Ala Lys Ala  
 1 5 10 15

Ile Asn Asn Asp Trp Ile Asp Leu Ala Lys Tyr Ala Val Leu Gly Ala  
 20 25 30

Val Gly Asp Ile Gln Asn Ile Glu Gly Lys Leu Ile  
 35 40

<210> 44  
 <211> 27  
 <212> PRT  
 <213> Methanocaldococcus jannaschii

<400> 44  
 Ala Ile Lys Tyr Ala Ser Glu Lys Val Asn Gly Ser Gly Gly Gly His  
 1 5 10 15

Lys Phe Ala Cys Gly Ala Tyr Ile Pro Asp Asn  
 20 25

<210> 45  
 <211> 28  
 <212> PRT  
 <213> Methanocaldococcus jannaschii

<400> 45  
 Arg Pro Ile Ile Ile Arg His His Ala Asp Thr Asp Gly Tyr Cys Gly  
 1 5 10 15

Gly Ile Ala Leu Glu Lys Ala Ile Leu Pro Ile Ile  
 20 25

<210> 46  
 <211> 19  
 <212> PRT  
 <213> Methanocaldococcus jannaschii

<400> 46  
 Leu Pro Leu Ile Val Leu Ile Asp Asn Gly Ser Thr Asp Glu Asp Ile  
 1 5 10 15

Pro Ala Ile

<210> 47  
 <211> 13  
 <212> PRT  
 <213> Methanocaldococcus jannaschii

<400> 47  
 Ile Glu Val Ile Val Ile Asp His His Phe Pro Gly Glu  
 1 5 10

<210> 48  
 <211> 44  
 <212> PRT  
 <213> Methanocaldococcus jannaschii

<400> 48  
 Lys Gly Arg Thr Tyr Asp Arg Glu Tyr Leu Glu Lys Ile Ala Leu Cys  
 1 5 10 15

Met Asp Phe Glu Ala Phe Tyr Leu Arg Phe Met Asp Gly Lys Gly Ile  
 20 25 30

Val Asp Asp Ile Leu Ala Thr Asn Ile Lys Glu Phe  
 35 40

<210> 49  
 <211> 27  
 <212> PRT  
 <213> Methanocaldococcus jannaschii

<400> 49  
 Gln Leu Met Glu Glu Ile Pro Glu Ala Ser Leu Asp Gly Gly Gly His  
 1 5 10 15

Glu Cys Ala Gly Ser Leu Lys Phe Val Glu Gly  
 20 25

<210> 50  
 <211> 28  
 <212> PRT  
 <213> Helicobacter pylori

<400> 50  
 Met Gln Val Tyr His Leu Ser His Ile Asp Leu Asp Gly Tyr Ala Cys  
 1 5 10 15

Gln Leu Val Ser Lys Gln Phe Phe Lys Asn Ile Gln  
 20 25

<210> 51  
 <211> 19  
 <212> PRT  
 <213> Helicobacter pylori

<400> 51  
 Glu Phe Leu Ile Leu Val Ser Asp Leu Asn Leu Asn Leu Asn Glu Ala  
 1 5 10 15

Glu Tyr Leu

<210> 52  
 <211> 13  
 <212> PRT  
 <213> Helicobacter pylori

<400> 52  
 Ile Gln Ile Gln Leu Leu Asp His His Ile Ser Gly Lys  
 1 5 10

<210> 53  
 <211> 44  
 <212> PRT  
 <213> Helicobacter pylori

15

<400> 53

Ile Val Tyr Glu Phe Leu Lys Lys His Tyr Ala Ile Leu Glu Pro Lys  
1 5 10 15

Asn Thr Thr Trp Leu Glu Pro Leu Val Glu Met Val Asn Ser Val Asp  
20 25 30

Ile Trp Asp Thr Gln Gly Tyr Gly Phe Glu Leu Gly  
35 40

<210> 54

<211> 27

<212> PRT

<213> Helicobacter pylori

<400> 54

Cys Asp Val Cys Glu Leu Ser Gln Met Cys Phe Asn Gly Gly Gly His  
1 5 10 15

Arg Asn Ala Ser Gly Gly Lys Ile Asp Gly Phe  
20 25

<210> 55

<211> 28

<212> PRT

<213> Haemophilus influenza

<400> 55

Gln Lys Ile Val Ile Val Gly Asp Phe Asp Ala Asp Gly Ala Thr Ser  
1 5 10 15

Thr Ala Leu Ser Val Leu Ala Leu Arg Gln Leu Gly  
20 25

<210> 56

<211> 19

<212> PRT

<213> Haemophilus influenza

<400> 56

Val Gln Leu Leu Met Thr Val Asp Asn Gly Val Ser Ser Phe Asp Gly  
1 5 10 15

Val Ala Phe

<210> 57  
 <211> 13  
 <212> PRT  
 <213> Haemophilus influenza

<400> 57  
 Ile Arg Val Leu Val Thr Asp His His Leu Pro Pro Glu  
 1 5 10

<210> 58  
 <211> 44  
 <212> PRT  
 <213> Haemophilus influenza

<400> 58  
 Leu Ala Val Arg Ala Lys Phe Arg Glu Leu Gly Ile Phe Thr Ala Glu  
 1 5 10 15

Thr Gln Pro Asn Phe Thr Asp Leu Leu Asp Leu Val Ala Leu Gly Thr  
 20 25 30

Ile Ala Asp Val Val Pro Leu Asp Gln Asn Asn Arg  
 35 40

<210> 59  
 <211> 27  
 <212> PRT  
 <213> Haemophilus influenza

<400> 59  
 Arg Ile His Ser Gln His Pro Asn Met Ile Leu Lys Phe Gly Gly His  
 1 5 10 15

Ala Met Ala Ala Gly Leu Ser Ile Arg Glu Glu  
 20 25

<210> 60  
 <211> 28  
 <212> PRT  
 <213> Helicobacter pylori

<400> 60  
 Thr Glu Ile Leu Val Val Gly Asp Tyr Asp Ala Asp Gly Val Ile Ser  
 1 5 10 15

Ser Ala Ile Met Ala Lys Phe Phe Glu Ser Leu Asn  
 20 25



<210> 61  
 <211> 19  
 <212> PRT  
 <213> Helicobacter pylori

<400> 61  
 Ala Pro Leu Ile Ile Thr Val Asp Asn Gly Ile Asn Ala Phe Glu Ala  
 1 5 10 15

Ala Arg Phe

<210> 62  
 <211> 13  
 <212> PRT  
 <213> Helicobacter pylori

<400> 62  
 Tyr Thr Leu Ile Ile Thr Asp His His Cys Leu His His  
 1 5 10

<210> 63  
 <211> 44  
 <212> PRT  
 <213> Helicobacter pylori

<400> 63  
 Leu Val Ala Phe Tyr Leu Cys Tyr Gly Ile His Gln Leu Leu Gly Lys  
 1 5 10 15

Glu Lys Ser His Ser Ser Glu Leu Leu Cys Leu Ala Gly Val Ala Thr  
 20 25 30

Ile Ala Asp Met Met Pro Leu Thr Phe Phe Asn Arg  
 35 40

<210> 64  
 <211> 27  
 <212> PRT  
 <213> Helicobacter pylori

<400> 64  
 Asp Ala Leu Asn Gly Val Ser Ser Leu Leu Leu Gly Tyr Gly Gly His  
 1 5 10 15

Arg Gln Ala Cys Gly Leu Ser Val Glu Lys Asn  
 20 25

<210> 65  
 <211> 28  
 <212> PRT  
 <213> Synechocystis sp.

<400> 65  
 Glu Lys Val Thr Ile Trp Gly Asp Phe Asp Ala Asp Gly Ile Thr Ser  
 1 5 10 15

Thr Ala Val Leu Trp Glu Gly Leu Gly Gln Phe Phe  
 20 25

<210> 66  
 <211> 19  
 <212> PRT  
 <213> Synechocystis sp.

<400> 66  
 Thr Lys Leu Ile Val Thr Cys Asp Thr Gly Ser Thr Asn Leu Asp Glu  
 1 5 10 15

Ile Val Tyr

<210> 67  
 <211> 13  
 <212> PRT  
 <213> Synechocystis sp.

<400> 67  
 Met Asp Val Ile Val Thr Asp His His Thr Leu Pro Asp  
 1 5 10

<210> 68  
 <211> 44  
 <212> PRT  
 <213> Synechocystis sp.

<400> 68  
 Val Ala Phe Lys Leu Val Glu Ala Leu Tyr Asn Gln Tyr Pro Thr Val  
 1 5 10 15

Pro Gln Gln Pro Leu Glu Asp Leu Leu Asp Leu Val Ala Ile Gly Leu  
 20 25 30

Ile Ala Asp Leu Val Thr Leu Gln Gly Asp Cys Arg  
 35 40

<210> 69  
 <211> 27  
 <212> PRT  
 <213> *Synechocystis* sp.

<400> 69  
 Ala Leu Leu His Ser Gln Arg His Leu Met Leu Gly Phe Gly Gly His  
 1 5 10 15

Pro Phe Ala Ala Gly Leu Ser Leu Pro Leu Asp  
 20 25

<210> 70  
 <211> 28  
 <212> PRT  
 <213> *Bacillus subtilis*

<400> 70  
 Ile Leu Ile Phe Gly His Gln Asn Pro Asp Thr Asp Thr Ile Cys Ser  
 1 5 10 15

Ala Ile Ala Tyr Ala Asp Leu Lys Asn Lys Leu Gly  
 20 25

<210> 71  
 <211> 19  
 <212> PRT  
 <213> *Bacillus subtilis*

<400> 71  
 Val Asn Gly Val Ile Leu Val Asp His Asn Glu Arg Gln Gln Ser Ile  
 1 5 10 15

Lys Asp Ile

<210> 72  
 <211> 13  
 <212> PRT  
 <213> *Bacillus subtilis*

<400> 72  
 Gln Val Leu Glu Val Ile Asp His His Arg Ile Ala Asn  
 1 5 10

<210> 73  
 <211> 44  
 <212> PRT  
 <213> *Bacillus subtilis*

20

<400> 73

Pro Val Gly Cys Thr Ala Thr Ile Leu Asn Lys Met Tyr Lys Glu Asn  
1 5 10 15

Asn Val Lys Ile Glu Lys Glu Ile Ala Gly Leu Met Leu Ser Ala Ile  
20 25 30

Ile Ser Asp Ser Leu Leu Phe Lys Ser Pro Thr Cys  
35 40

<210> 74

<211> 21

<212> PRT

<213> Bacillus subtilis

<400> 74

Asp Leu Ser Lys Lys Thr Val Glu Glu Leu Ile Ser Leu Asp Ala Lys  
1 5 10 15

Glu Phe Thr Leu Gly  
20

<210> 75

<211> 20

<212> PRT

<213> Bacillus subtilis

<400> 75

Thr Ala Leu Leu Lys Gly Val Val Ser Arg Lys Lys Gln Val Val Pro  
1 5 10 15

Val Leu Thr Asp  
20

<210> 76

<211> 28

<212> PRT

<213> Streptococcus gordonii

<400> 76

Ile Leu Val Phe Gly His Gln Asn Pro Asp Ser Asp Ala Ile Gly Ser  
1 5 10 15

Ser Tyr Ala Phe Ala Tyr Leu Ala Arg Glu Ala Tyr  
20 25

<210> 77  
 <211> 19  
 <212> PRT  
 <213> Streptococcus gordonii

<400> 77  
 Ala Glu Gln Val Ile Leu Thr Asp His Asn Glu Phe Gln Gln Ser Val  
 1 5 10 15

Ala Asp Ile

<210> 78  
 <211> 13  
 <212> PRT  
 <213> Streptococcus gordonii

<400> 78  
 Glu Val Tyr Gly Val Val Asp His His Arg Val Ala Asn  
 1 5 10

<210> 79  
 <211> 44  
 <212> PRT  
 <213> Streptococcus gordonii

<400> 79  
 Pro Val Gly Ser Ala Ser Ser Ile Val Tyr Arg Met Phe Lys Glu His  
 1 5 10 15

Ser Val Ala Val Ser Lys Glu Ile Ala Gly Leu Met Leu Ser Gly Leu  
 20 25 30

Ile Ser Asp Thr Leu Leu Leu Lys Ser Pro Thr Thr  
 35 40

<210> 80  
 <211> 21  
 <212> PRT  
 <213> Streptococcus gordonii

<400> 80  
 Asn Leu Ala Ser Lys Ser Ala Glu Glu Leu Ile Asp Ile Asp Ala Lys  
 1 5 10 15

Thr Phe Glu Leu Asn  
 20

<210> 81  
 <211> 20  
 <212> PRT  
 <213> Streptococcus gordonii

<400> 81  
 His Ala Phe Leu Ala Gly Ala Val Ser Arg Lys Lys Gln Val Val Pro  
 1 5 10 15

Gln Leu Thr Glu  
 20

<210> 82  
 <211> 28  
 <212> PRT  
 <213> Methanocaldococcus jannaschii

<400> 82  
 Arg Tyr Val Val Gly His Lys Asn Pro Asp Thr Asp Ser Ile Ala Ser  
 1 5 10 15

Ala Ile Val Leu Ala Tyr Phe Leu Asp Cys Tyr Pro  
 20 25

<210> 83  
 <211> 19  
 <212> PRT  
 <213> Methanocaldococcus jannaschii

<400> 83  
 Gly Lys Glu Ile Ile Leu Val Asp His Ser Glu Lys Ser Gln Ser Phe  
 1 5 10 15

Asp Asp Leu

<210> 84  
 <211> 13  
 <212> PRT  
 <213> Methanocaldococcus jannaschii

<400> 84  
 Lys Leu Ile Ala Ile Ile Asp His His Lys Val Gly Leu  
 1 5 10

<210> 85  
 <211> 44  
 <212> PRT  
 <213> Methanocaldococcus jannaschii

&lt;400&gt; 85

Ile	Ala	Glu	Leu	Tyr	Phe	Lys	Asp	Ala	Ile	Asp	Leu	Ile	Gly	Gly	Lys
1				5					10					15	

Lys	Lys	Glu	Leu	Lys	Pro	Asp	Leu	Ala	Gly	Leu	Leu	Leu	Ser	Ala	Ile
			20					25					30		

Ile	Ser	Asp	Thr	Val	Leu	Phe	Lys	Ser	Pro	Thr	Thr
		35					40				

&lt;210&gt; 86

&lt;211&gt; 21

&lt;212&gt; PRT

&lt;213&gt; Methanocaldococcus jannaschii

&lt;400&gt; 86

Val	Val	Gly	Lys	Leu	Lys	Pro	Glu	Glu	Ile	Ile	Asn	Met	Asp	Phe	Lys
1				5					10					15	

Asn	Phe	Asp	Phe	Asn
			20	

&lt;210&gt; 87

&lt;211&gt; 20

&lt;212&gt; PRT

&lt;213&gt; Methanocaldococcus jannaschii

&lt;400&gt; 87

Ser	Val	Phe	Leu	Glu	Gly	Val	Met	Ser	Arg	Lys	Lys	Gln	Val	Val	Pro
1				5					10					15	

Pro	Leu	Glu	Arg
			20

&lt;210&gt; 88

&lt;211&gt; 28

&lt;212&gt; PRT

&lt;213&gt; Archaeoglobus fulgidus

&lt;400&gt; 88

Val	Tyr	Val	Val	Gly	His	Lys	Asn	Pro	Asp	Thr	Asp	Ser	Val	Cys	Ser
1				5					10					15	

Ala	Ile	Ala	Phe	Ala	Tyr	Leu	Trp	Asn	Lys	Trp	Lys
			20					25			

<210> 89  
 <211> 19  
 <212> PRT  
 <213> Archaeoglobus fulgidus

<400> 89  
 Gly Lys Lys Val Ala Leu Val Asp His Ser Glu Lys Ala Gln Thr Val  
 1 5 10 15

Asp Gly Ile

<210> 90  
 <211> 13  
 <212> PRT  
 <213> Archaeoglobus fulgidus

<400> 90  
 Glu Val Val Ala Ile Val Asp His His Lys Ile Gly Asp  
 1 5 10

<210> 91  
 <211> 44  
 <212> PRT  
 <213> Archaeoglobus fulgidus

<400> 91  
 Pro Val Gly Cys Thr Ala Thr Val Ile Lys Leu Leu Phe Asp Lys Thr  
 1 5 10 15

Gly Val Glu Ile Pro Lys Asp Ile Ala Gly Ile Leu Leu Ser Ser Ile  
 20 25 30

Leu Ser Asp Thr Val Ile Phe Lys Ser Ala Thr Thr  
 35 40

<210> 92  
 <211> 21  
 <212> PRT  
 <213> Archaeoglobus fulgidus

<400> 92  
 Ala Val Asp Asp Leu Thr Ala Met Asp Ile Ile Lys Arg Asp Tyr Lys  
 1 5 10 15

Asp Phe Asp Met Ser  
 20



<210> 93  
 <211> 20  
 <212> PRT  
 <213> Archaeoglobus fulgidus

<400> 93  
 Ser Val Trp Leu Asp Gly Val Met Ser Arg Lys Lys Gln Val Val Pro  
 1 5 10 15

Pro Leu Glu Lys  
 20

<210> 94  
 <211> 28  
 <212> PRT  
 <213> Leishmania major

<400> 94  
 Thr Val Val Gln Gly Asn Glu Gly Gly Asp Met Asp Ser Ile Val Gly  
 1 5 10 15

Cys Ile Tyr Leu Ala Met Leu Phe Asp Lys Gln Pro  
 20 25

<210> 95  
 <211> 19  
 <212> PRT  
 <213> Leishmania major

<400> 95  
 Gln Ile Ala His Asn Leu Val Asp Ile Ala Ala Leu Asn Ala Ser Val  
 1 5 10 15

Val Leu Tyr

<210> 96  
 <211> 13  
 <212> PRT  
 <213> Leishmania major

<400> 96  
 Arg Val Val Gly Val Val Asp His His Phe Asp Glu Gln  
 1 5 10

<210> 97  
 <211> 44  
 <212> PRT  
 <213> Leishmania major

&lt;400&gt; 97

Leu	Arg	Thr	Val	Gly	Ser	Ala	Cys	Thr	Leu	Val	Thr	Glu	Leu	Tyr	Arg
1				5					10					15	

Glu	Cys	Gly	Glu	Asp	Val	Val	Cys	Pro	Thr	Leu	Leu	Thr	Ala	Pro	Ile
			20					25					30		

Val	Leu	Asp	Thr	Val	Asn	Phe	Glu	Pro	Ala	Gln	Lys
		35					40				

&lt;210&gt; 98

&lt;211&gt; 21

&lt;212&gt; PRT

&lt;213&gt; Leishmania major

&lt;400&gt; 98

Asp	Val	Leu	Ala	Leu	Ser	Val	Pro	Gln	Ile	Leu	Arg	Arg	Asp	Tyr	Lys
1				5					10					15	

Gln	Phe	Ser	Phe	Lys
			20	

&lt;210&gt; 99

&lt;211&gt; 19

&lt;212&gt; PRT

&lt;213&gt; Leishmania major

&lt;400&gt; 99

Tyr	Ser	Leu	Ser	Asp	Pro	Ser	Ile	Ser	Arg	Lys	Lys	Leu	Val	Pro	Ala
1				5					10					15	

Leu	Ser	Glu
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&lt;210&gt; 100

&lt;211&gt; 28

&lt;212&gt; PRT

&lt;213&gt; Saccharomyces cerevisiae

&lt;400&gt; 100

Thr	Ile	Cys	Val	Gly	Asn	Glu	Ser	Ala	Asp	Met	Asp	Ser	Ile	Ala	Ser
1				5					10					15	

Ala	Ile	Thr	Tyr	Ser	Tyr	Cys	Gln	Tyr	Ile	Tyr	Asn
			20					25			

<210> 101  
 <211> 19  
 <212> PRT  
 <213> *Saccharomyces cerevisiae*

<400> 101  
 Glu Leu Asn Ser Tyr Leu Val Asp Asn Asn Asp Thr Pro Lys Asn Leu  
 1 5 10 15

Lys Asn Tyr

<210> 102  
 <211> 13  
 <212> PRT  
 <213> *Saccharomyces cerevisiae*

<400> 102  
 Asn Val Val Gly Ile Ile Asp His His Phe Asp Leu Gln  
 1 5 10

<210> 103  
 <211> 44  
 <212> PRT  
 <213> *Saccharomyces cerevisiae*

<400> 103  
 Ser Cys Ser Ser Leu Val Phe Asn Tyr Trp Tyr Glu Lys Leu Gln Gly  
 1 5 10 15

Asp Arg Glu Val Val Met Asn Ile Ala Pro Leu Leu Met Gly Ala Ile  
 20 25 30

Leu Ile Asp Thr Ser Asn Met Arg Arg Lys Val Glu  
 35 40

<210> 104  
 <211> 21  
 <212> PRT  
 <213> *Saccharomyces cerevisiae*

<400> 104  
 Asp Ile Lys Gly Phe Ser Val Ser Asp Ile Leu Lys Lys Asp Tyr Lys  
 1 5 10 15

Gln Phe Asn Phe Gln  
 20

<210> 105  
 <211> 20  
 <212> PRT  
 <213> *Saccharomyces cerevisiae*

<400> 105  
 Met Phe Lys Gln Leu Asn Val Glu Ala Thr Arg Lys Gln Val Val Pro  
 1 5 10 15

Tyr Leu Glu Glu  
 20

<210> 106  
 <211> 28  
 <212> PRT  
 <213> *Drosophila melanogaster*

<400> 106  
 His Leu Val Met Gly Asn Glu Ser Cys Asp Leu Asp Ser Ala Val Ser  
 1 5 10 15

Ala Val Thr Leu Ala Phe Val Tyr Ala Gln Arg His  
 20 25

<210> 107  
 <211> 19  
 <212> PRT  
 <213> *Drosophila melanogaster*

<400> 107  
 Asp Val Asn Val Ile Leu Val Asp His His Val Ser Pro Leu Ala Pro  
 1 5 10 15

Asn Val Thr

<210> 108  
 <211> 13  
 <212> PRT  
 <213> *Drosophila melanogaster*

<400> 108  
 Asn Val Thr Glu Ile Leu Asp His Arg Pro Leu Glu Asp  
 1 5 10

<210> 109  
 <211> 44  
 <212> PRT  
 <213> *Drosophila melanogaster*

&lt;400&gt; 109

Ser	Val	Gly	Ser	Cys	Ala	Thr	Leu	Val	Ala	Gln	Arg	Tyr	Leu	Ala	Glu
1				5					10					15	

Asp	Gln	Pro	Arg	Ser	Thr	Ser	Val	Ala	Gln	Leu	Leu	His	Ala	Thr	Ile
			20					25					30		

Val	Leu	Asp	Thr	Ile	Asn	Phe	Ala	Pro	Ala	Ala	Lys
		35					40				

&lt;210&gt; 110

&lt;211&gt; 21

&lt;212&gt; PRT

<213> *Drosophila melanogaster*

&lt;400&gt; 110

Asp	Ile	Ser	Lys	Leu	Thr	Leu	Thr	Glu	Val	Leu	Arg	Lys	Asp	Met	Lys
1				5					10					15	

Val	Leu	Gln	Thr	Asp
				20

&lt;210&gt; 111

&lt;211&gt; 19

&lt;212&gt; PRT

<213> *Drosophila melanogaster*

&lt;400&gt; 111

Leu	Arg	Gln	His	Asn	Val	Gln	Ala	Thr	Arg	Lys	His	Ile	Leu	Pro	Ile
1				5					10					15	

Val Lys Arg

&lt;210&gt; 112

&lt;211&gt; 28

&lt;212&gt; PRT

<213> *Homo sapiens*

&lt;400&gt; 112

His	Val	Val	Leu	Gly	Asn	Glu	Ala	Cys	Asp	Leu	Asp	Ser	Thr	Val	Ser
1				5					10					15	

Ala	Leu	Ala	Leu	Ala	Phe	Tyr	Leu	Ala	Lys	Thr	Thr
			20					25			

<210> 113  
 <211> 19  
 <212> PRT  
 <213> Homo sapiens

<400> 113  
 Gln Leu Thr Leu Ile Leu Val Asp His His Ile Leu Ser Lys Ser Asp  
 1 5 10 15

Thr Ala Leu

<210> 114  
 <211> 13  
 <212> PRT  
 <213> Homo sapiens

<400> 114  
 Ala Val Ala Glu Val Leu Asp His Arg Pro Ile Glu Pro  
 1 5 10

<210> 115  
 <211> 44  
 <212> PRT  
 <213> Homo sapiens

<400> 115  
 Leu Val Gly Ser Cys Ala Thr Leu Val Thr Glu Arg Ile Leu Gln Gly  
 1 5 10 15

Ala Pro Glu Ile Leu Asp Arg Thr Ala Ala Leu Leu His Gly Thr Ile  
 20 25 30

Ile Leu Asp Cys Val Asn Met Asp Leu Lys Ile Gly  
 35 40

<210> 116  
 <211> 21  
 <212> PRT  
 <213> Homo sapiens

<400> 116  
 Asp Val Ser Gly Leu Thr Thr Glu Gln Met Leu Arg Lys Asp Gln Lys  
 1 5 10 15

Thr Ile Tyr Arg Gln  
 20

<210> 117  
 <211> 19  
 <212> PRT  
 <213> Homo sapiens

<400> 117  
 Tyr Leu Gln Gly Asn Thr Gln Val Ser Arg Lys Lys Leu Leu Pro Leu  
 1                      5                      10                      15

Leu Gln Glu

<210> 118  
 <211> 5  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
       5x His tag

<400> 118  
 His His His His His  
 1                      5